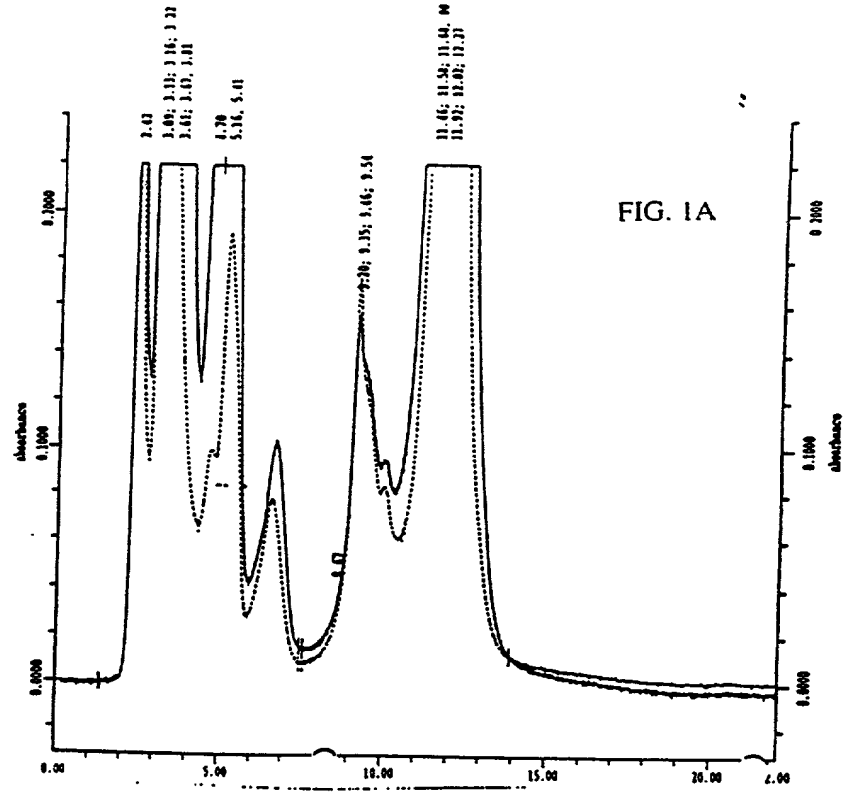


FIG. 1A

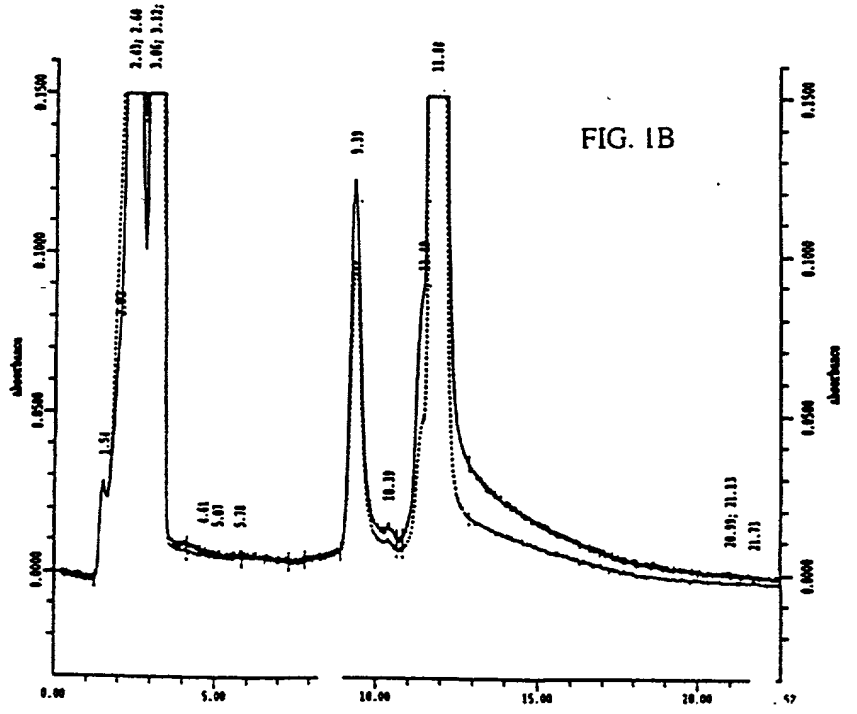


FIG. 1B

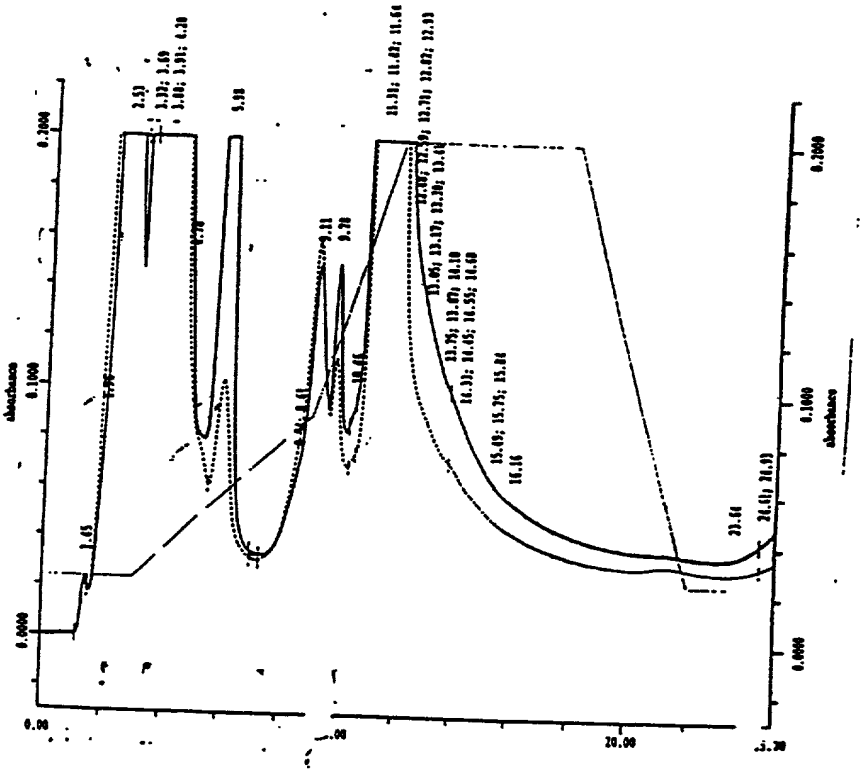


FIG. 2

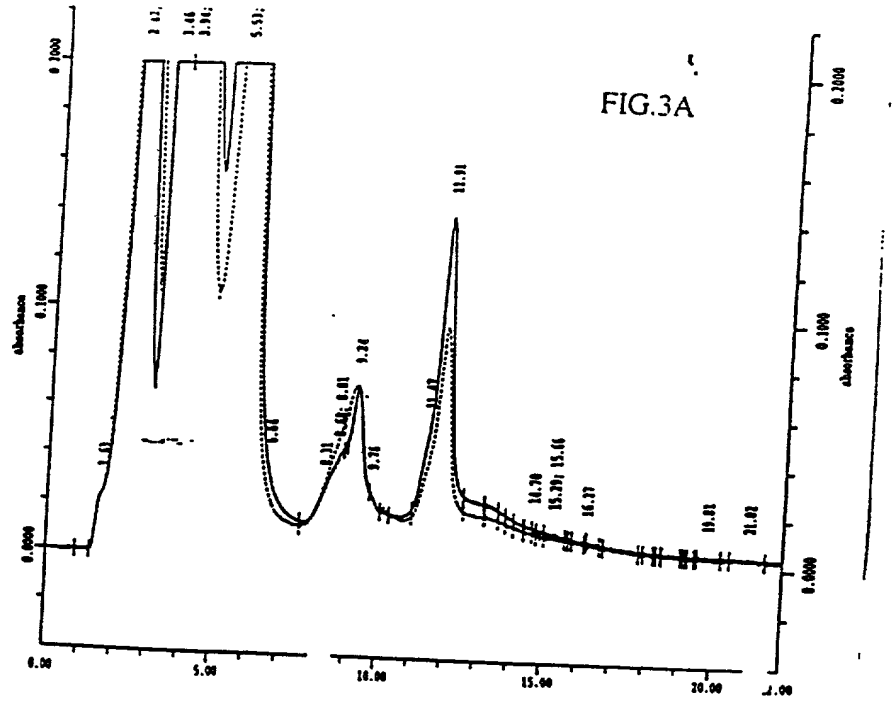


FIG.3A

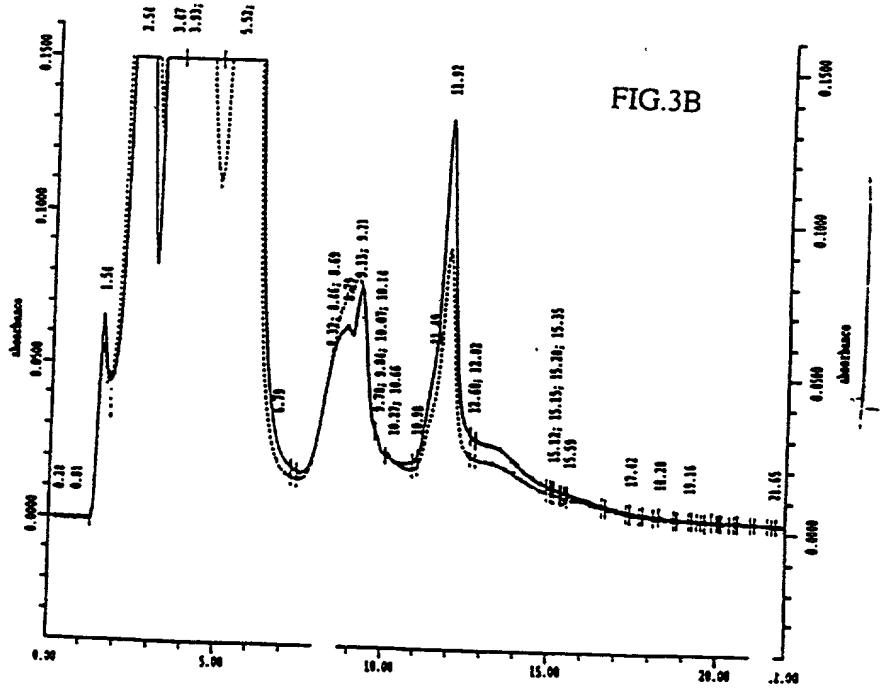


FIG.3B

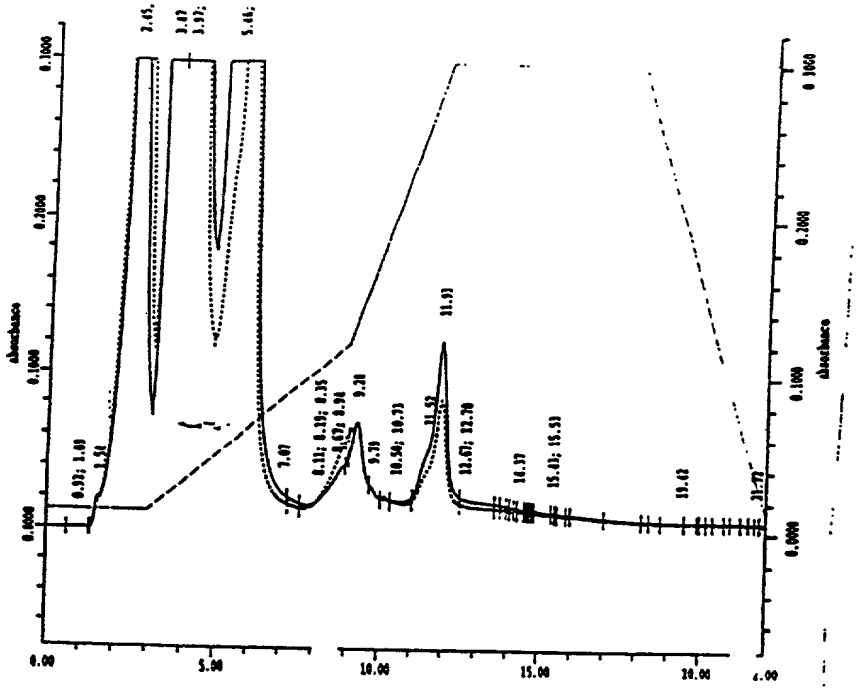


FIG.3C

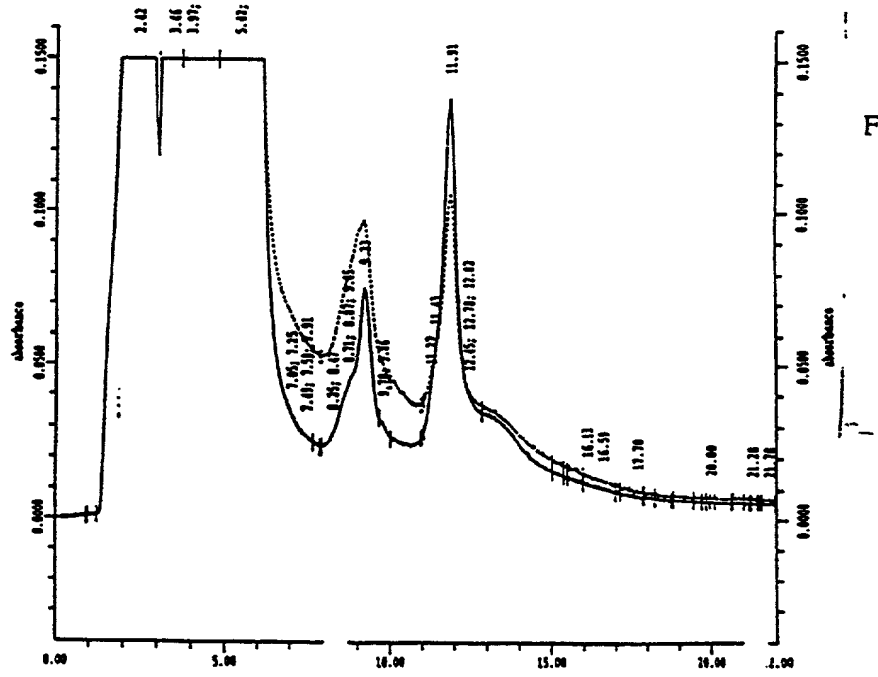


FIG.3D

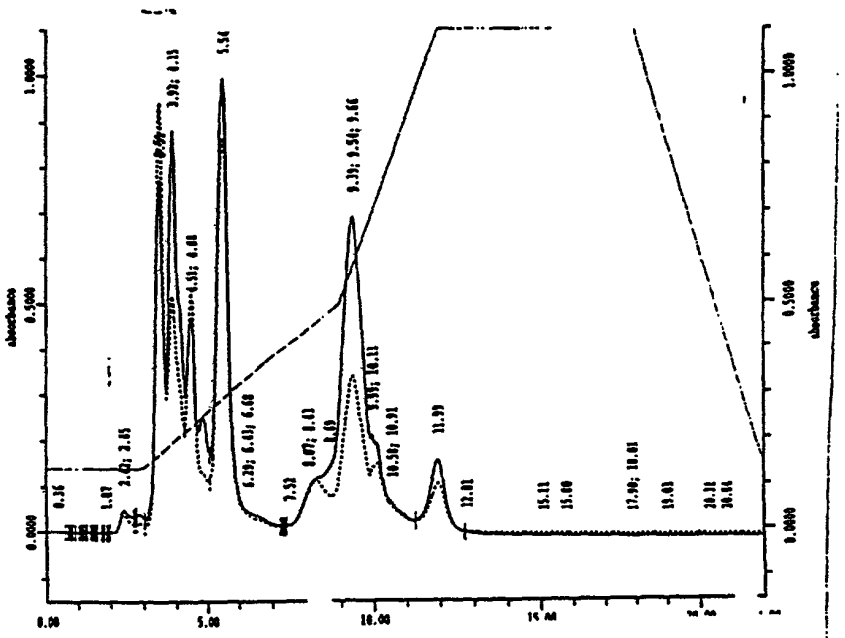


FIG.3E

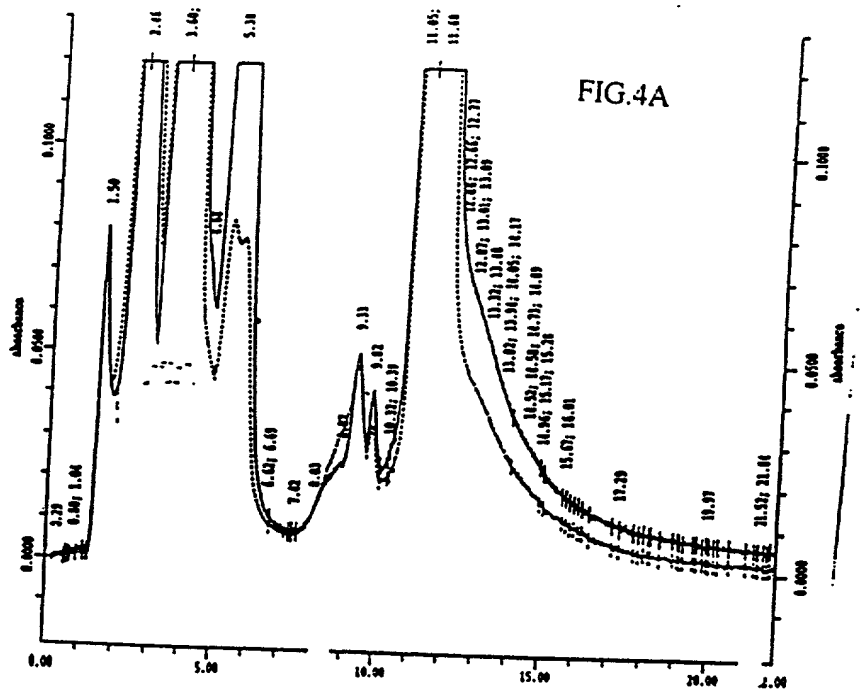


FIG.4A

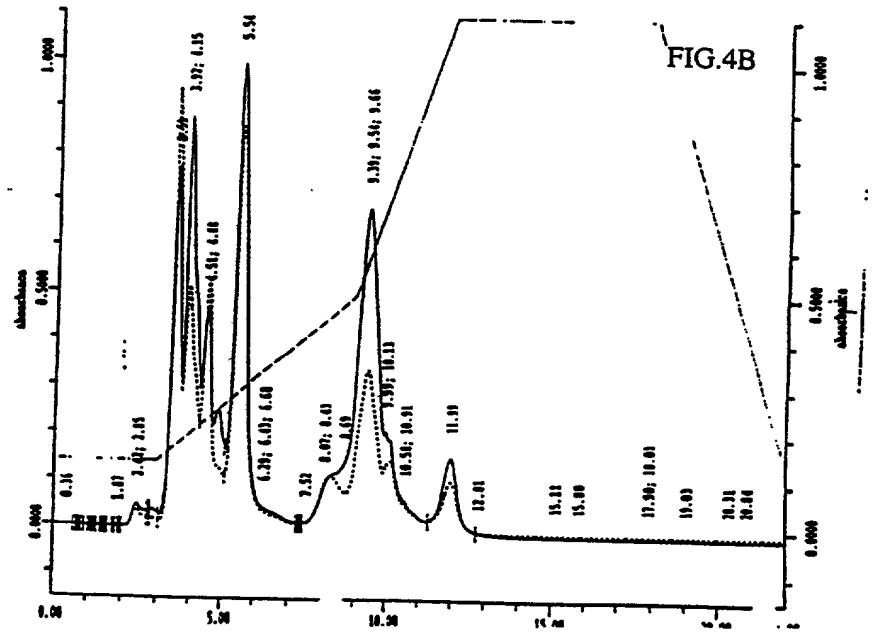


FIG.4B

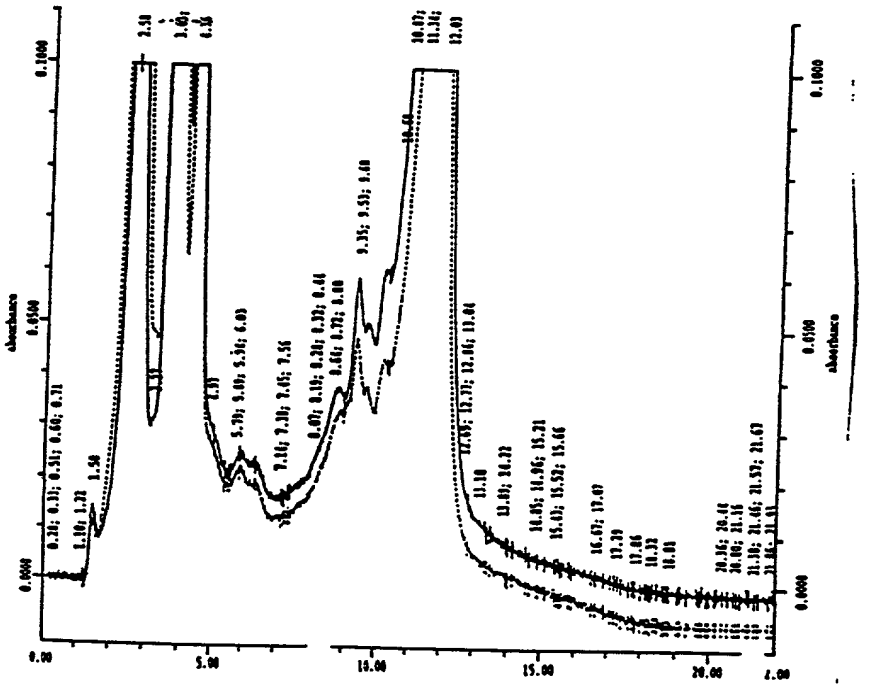


FIG.5

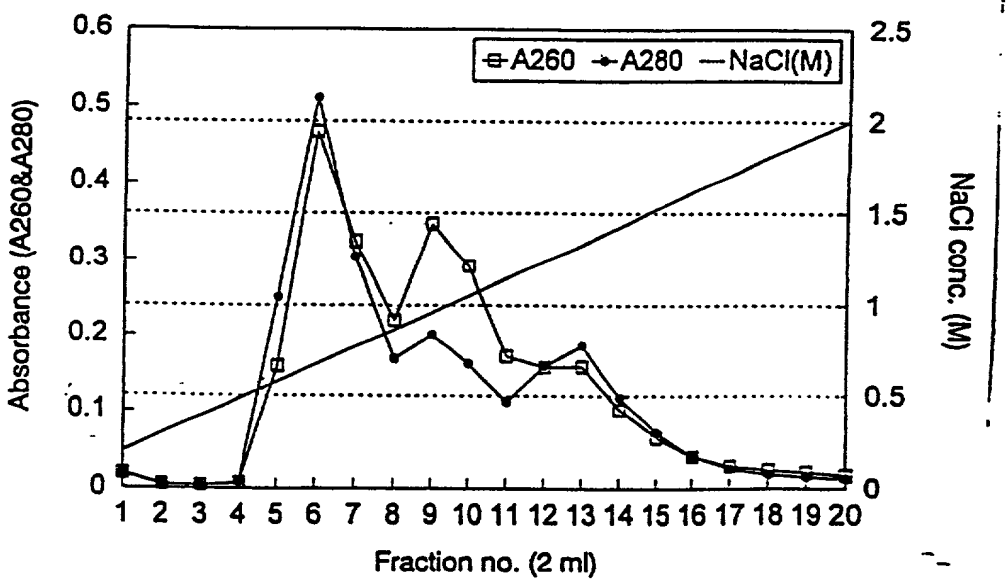

A260
A280
NaCl(M)
Absorbance (A260&A280)
NaCl conc. (M)
Fraction no. (2 ml)
0.6
0.5
0.4
0.3
0.2
0.1
0
2.5
2
1.5
1
0.5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

FIG.6

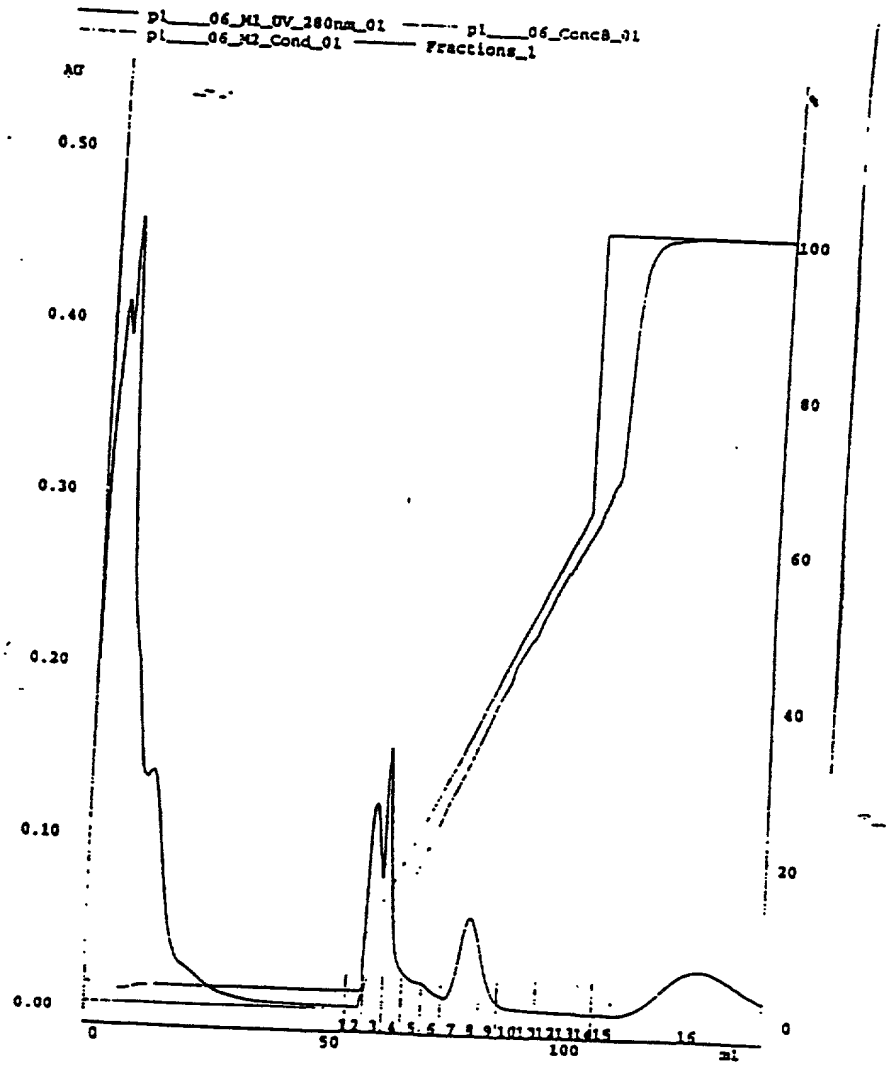

p1____06_M1_UV_280nm_01
p1____06_M2_Cond_01
p1____06_Conc8_01
Fractions_1
AU
0.50
0.40
0.30
0.20
0.10
0.00
100
80
60
40
20
0
50
100
ml

FIG.7

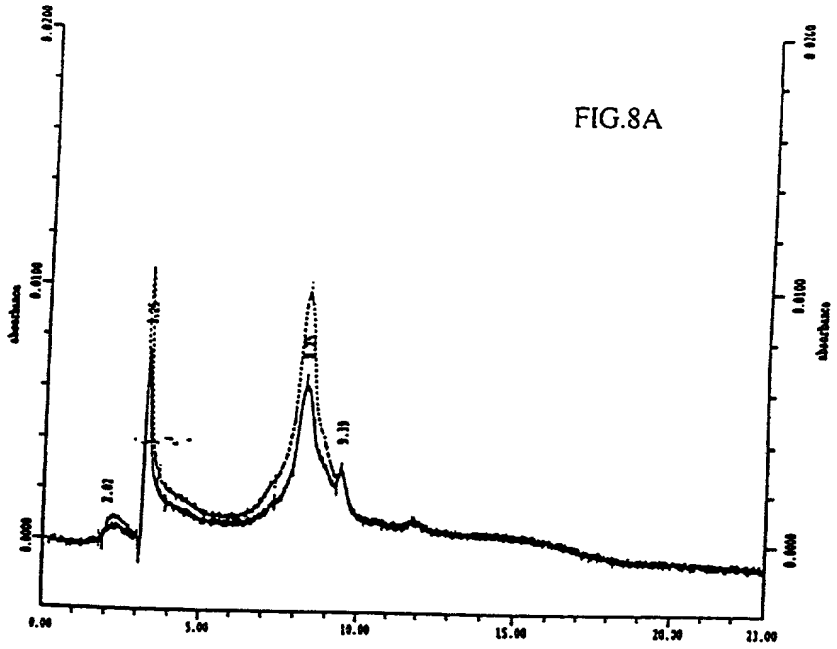


FIG.8A

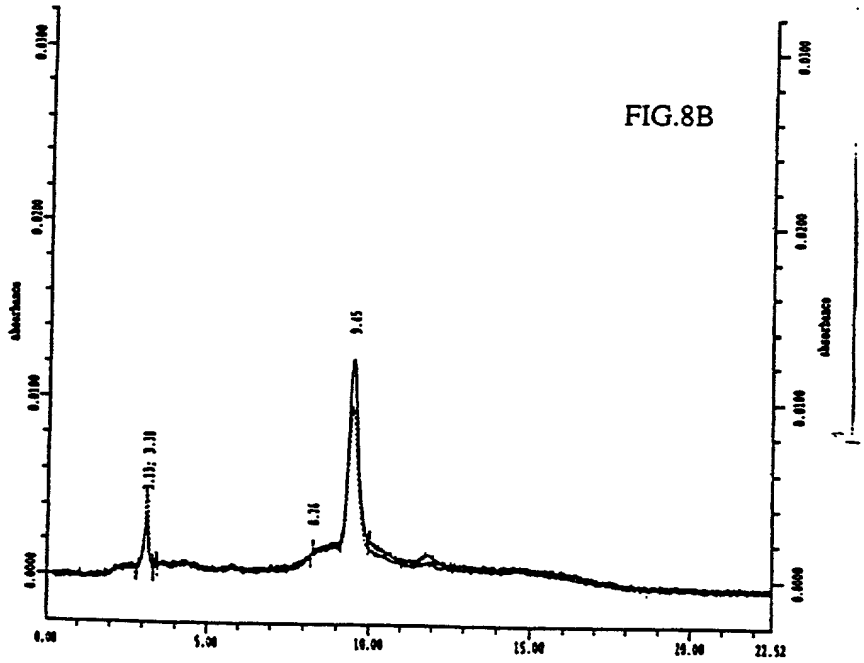


FIG.8B

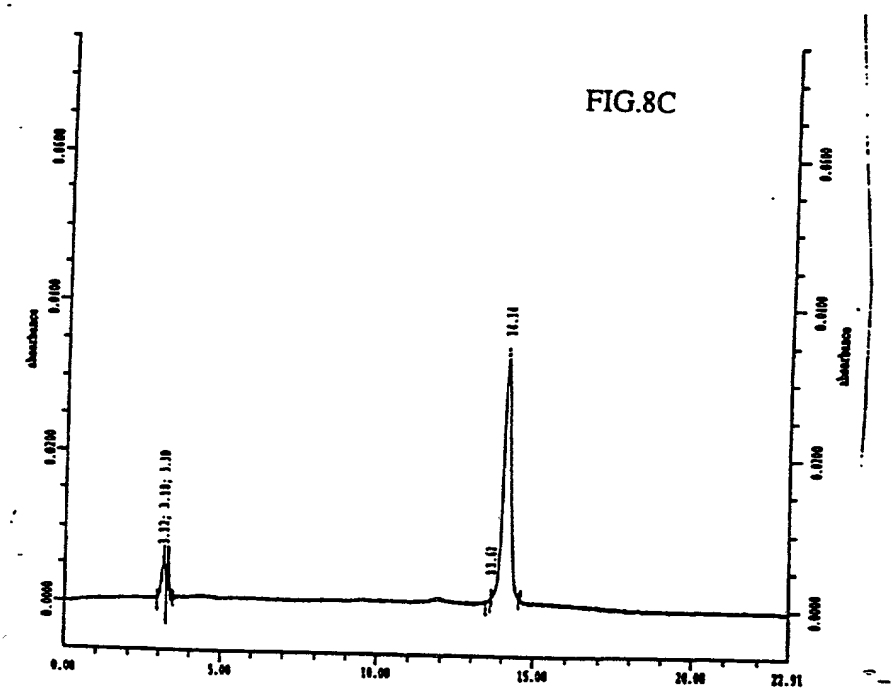

Absorbance
0.0000
0.0100
0.0200
0.0300
0.0400
3.12; 3.18; 3.30
13.12
14.14
0.00
5.00
10.00
15.00
20.00
22.91

FIG.8C

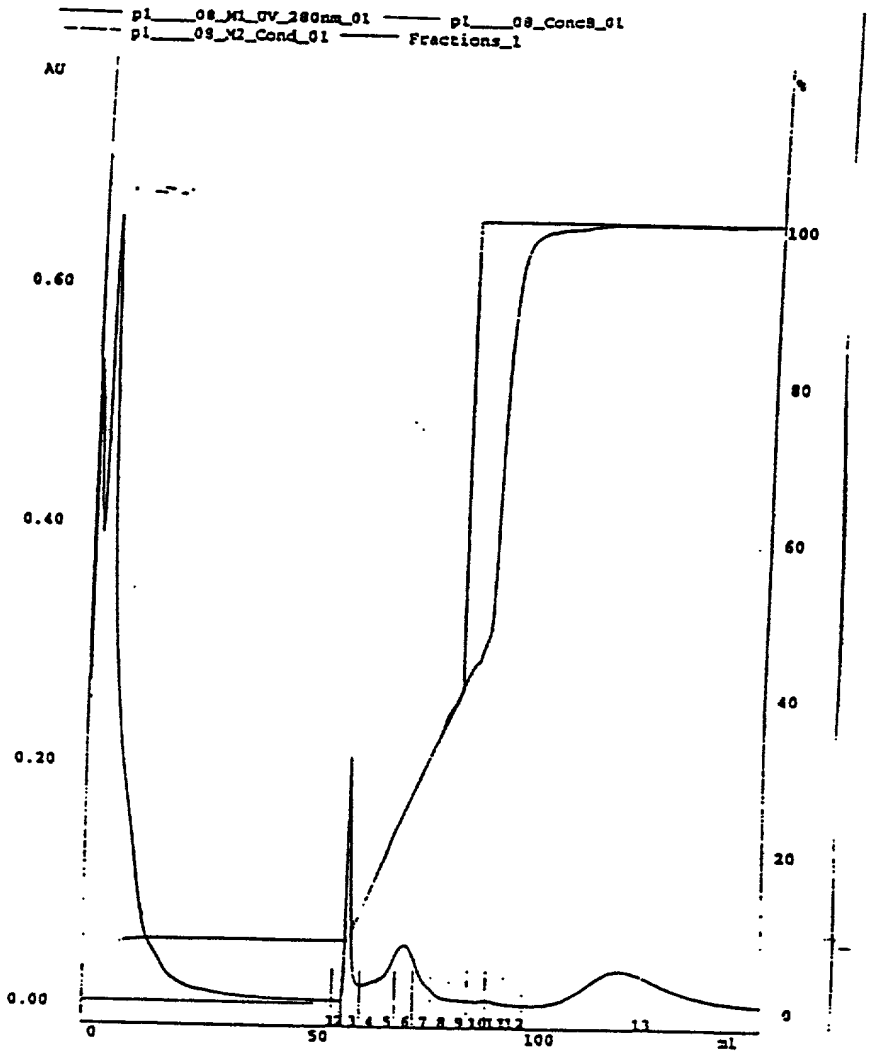

p1____08_M1_UV_280nm_01
p1____08_M2_Cond_01
p1____08_Conc8_01
Fractions_1
AU
%
0.60
0.40
0.20
0.00
100
80
60
40
20
0
0
50
100
ml

FIG. 9

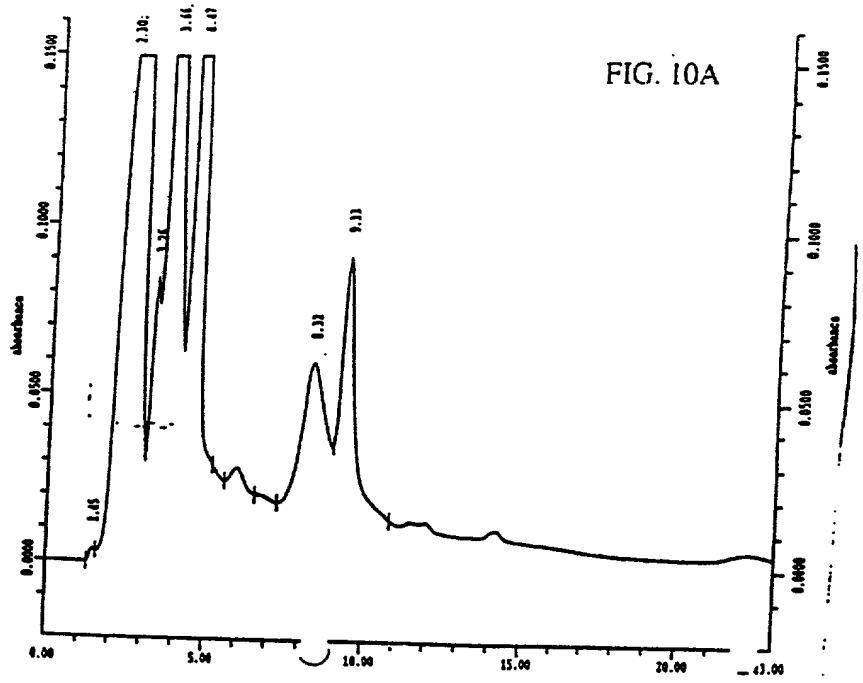


FIG. 10A

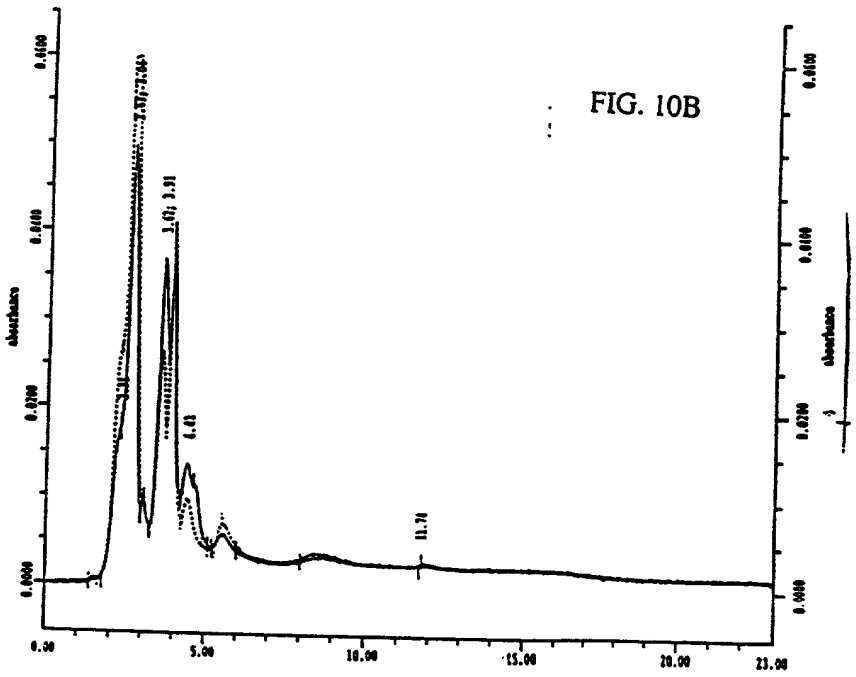


FIG. 10B

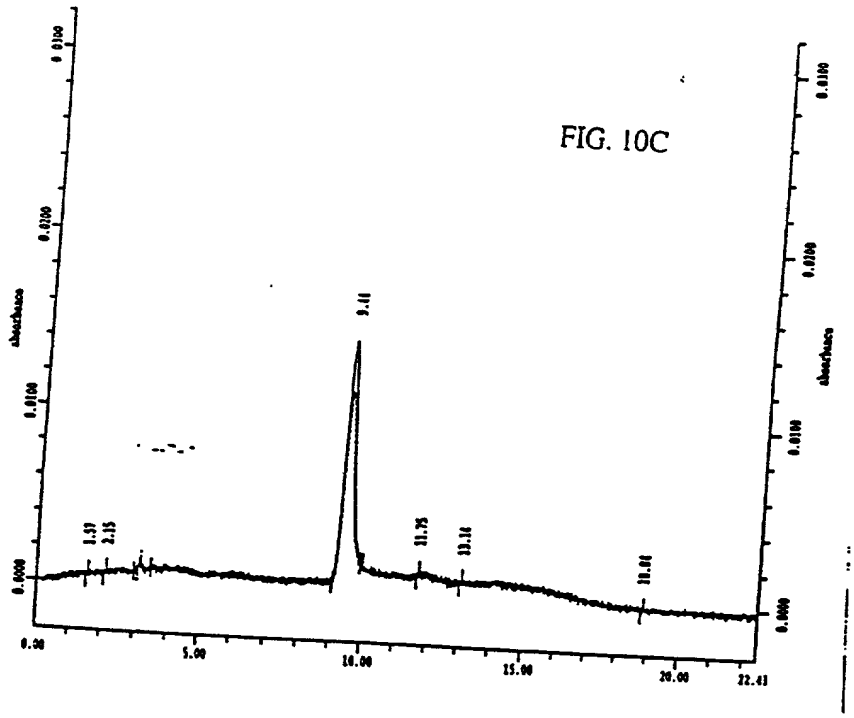


FIG. 10C

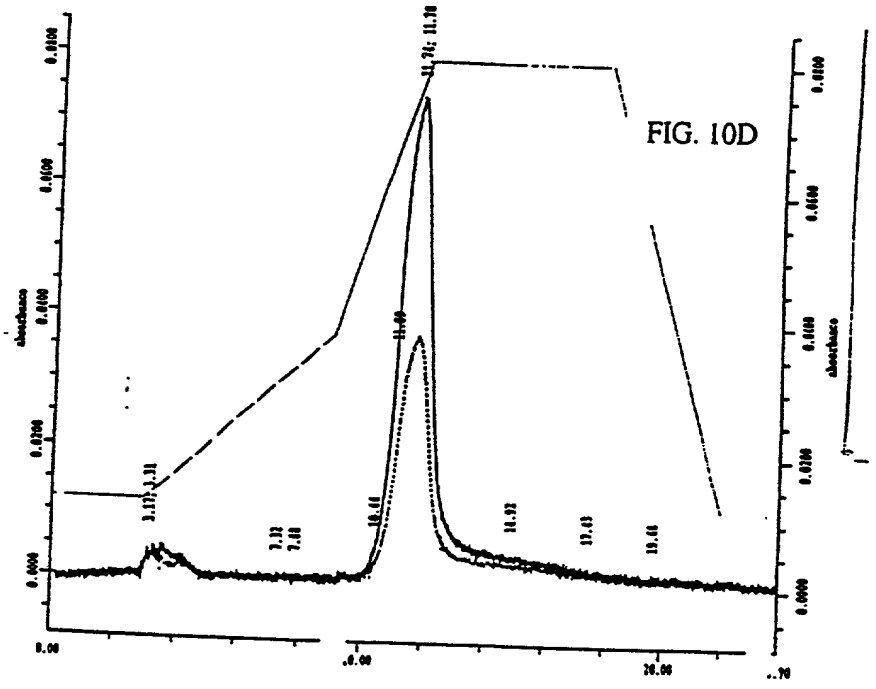


FIG. 10D

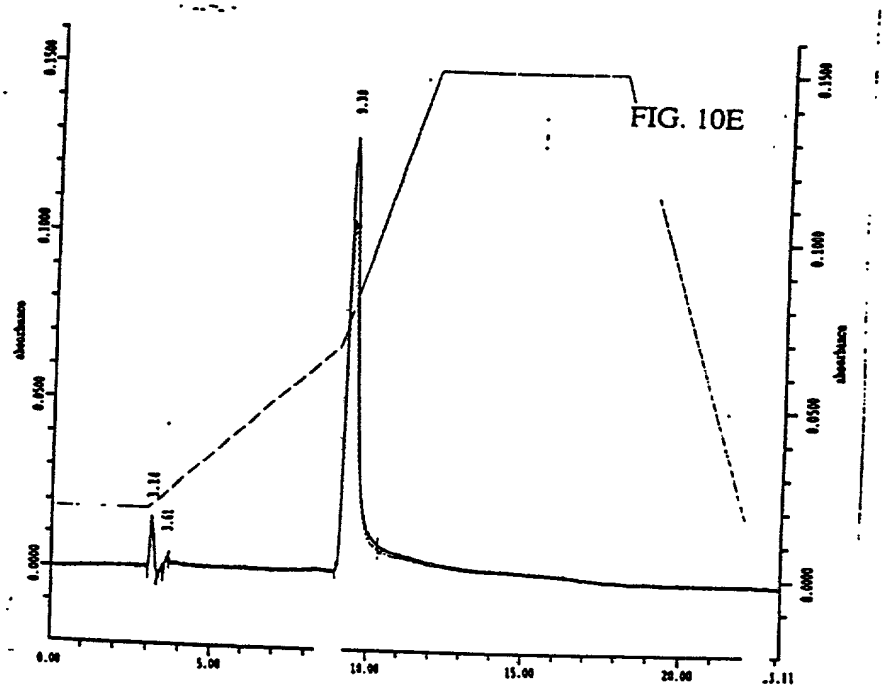

0.1500
0.1000
0.0500
0.0000
absorbance
3.31
3.61
9.30
0.00
5.00
10.00
15.00
20.00
.5.11

FIG. 10E

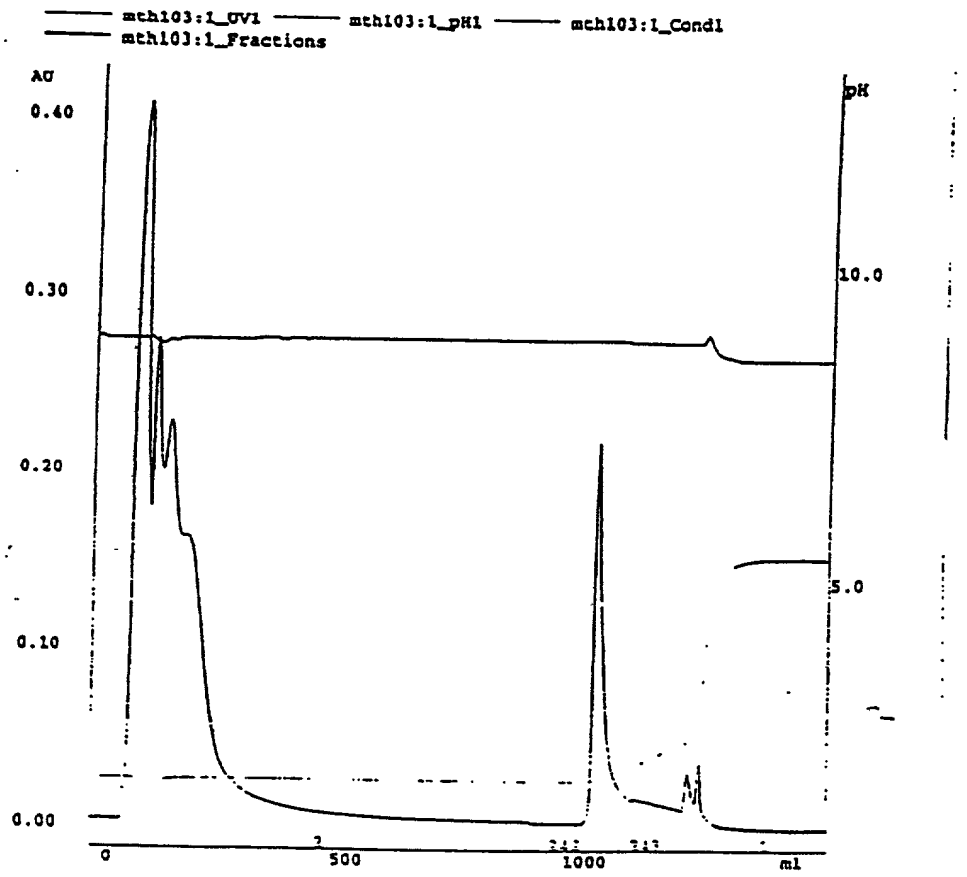

mth103:1_UV1
mth103:1_pH1
mth103:1_Cond1
mth103:1_Fractions
AU
0.40
0.30
0.20
0.10
0.00
pH
10.0
5.0
0
500
1000
ml

FIG. 11

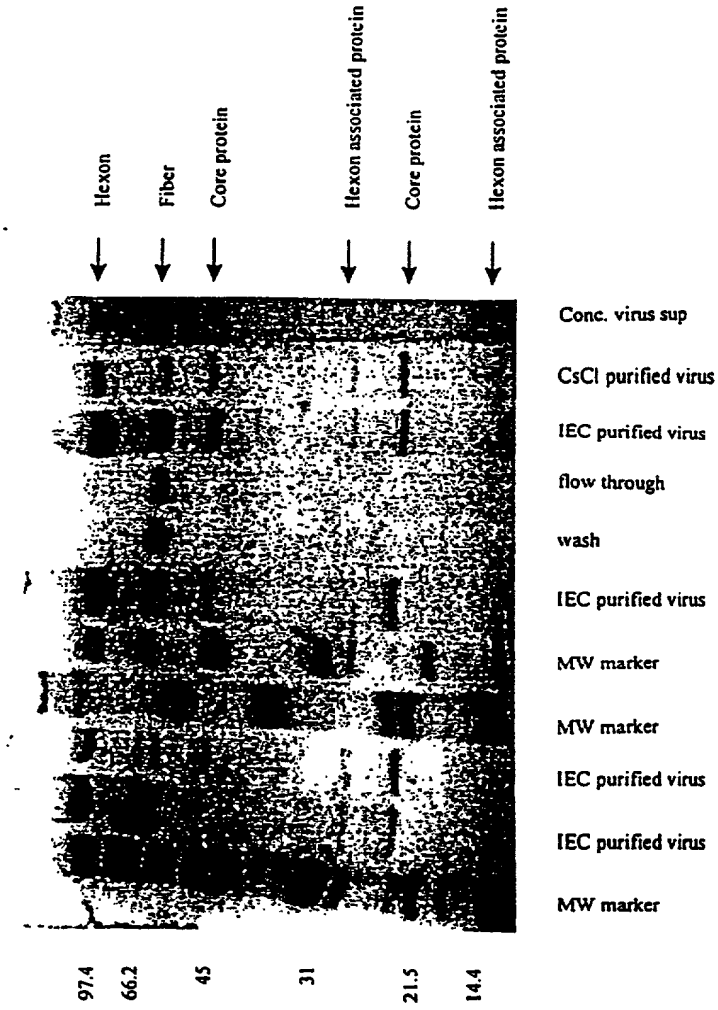

Hexon
Fiber
Core protein
Hexon associated protein
Core protein
Hexon associated protein
Conc. virus sup
CsCl purified virus
IEC purified virus
flow through
wash
IEC purified virus
MW marker
MW marker
IEC purified virus
IEC purified virus
MW marker
97.4
66.2
45
31
21.5
14.4

FIG. 12

66.2 kd
Novex MWM
BSA Std
Vector sup
Conc./diafil. sup
IEC purified Adp53
CsCl purified Adp53
BSA Std
Flow thru
Wash
Novex MWM

FIG. 13

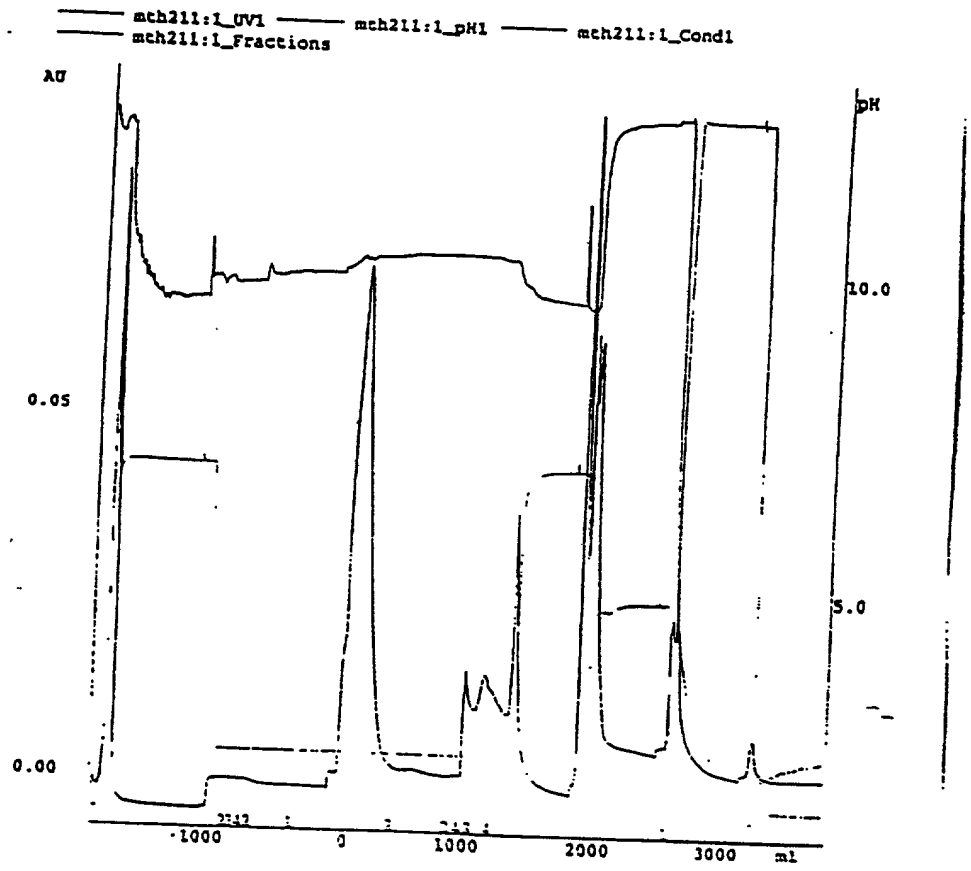

mch211:1_UV1
mch211:1_pH1
mch211:1_Cond1
mch211:1_Fractions
AU
0.05
0.00
pH
10.0
5.0
-1000
0
1000
2000
3000
ml

FIG. 14

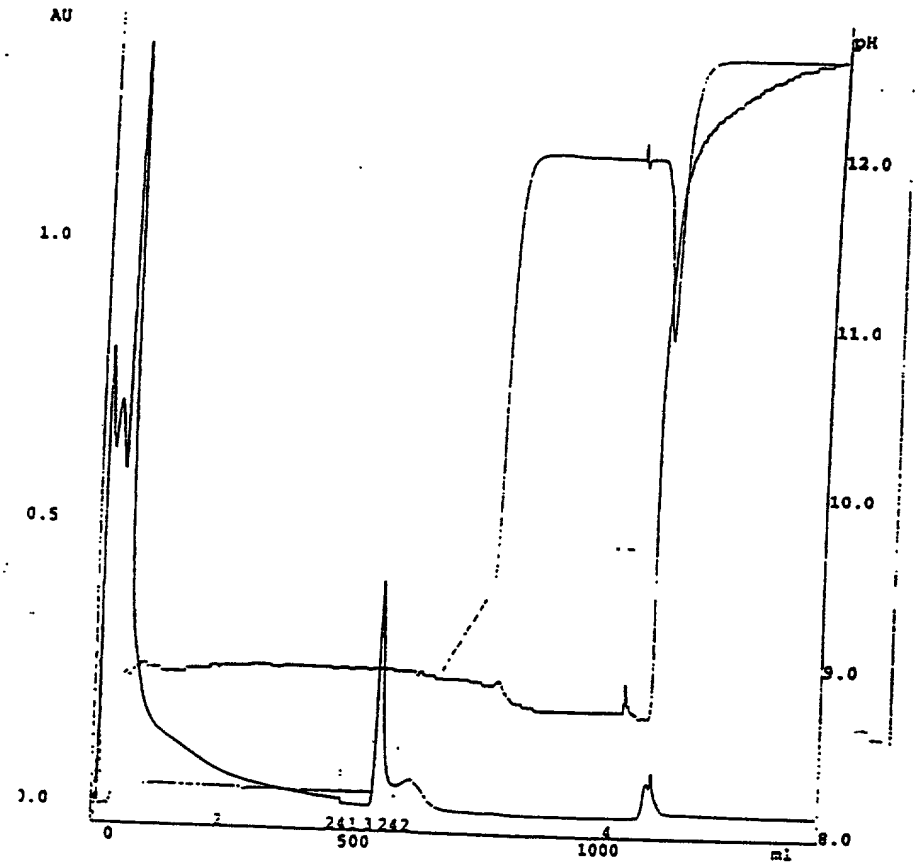


FIG. 15

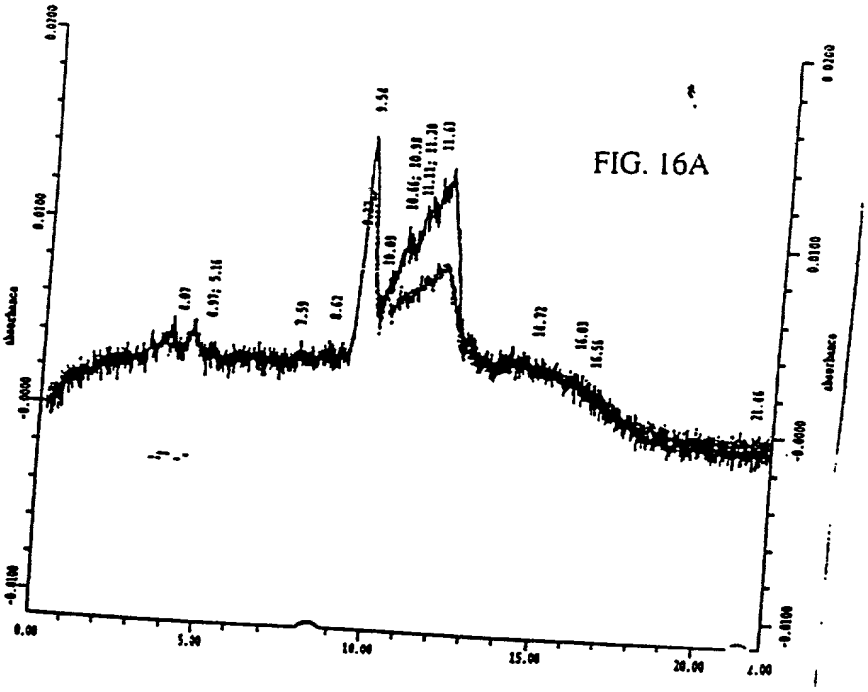


FIG. 16A

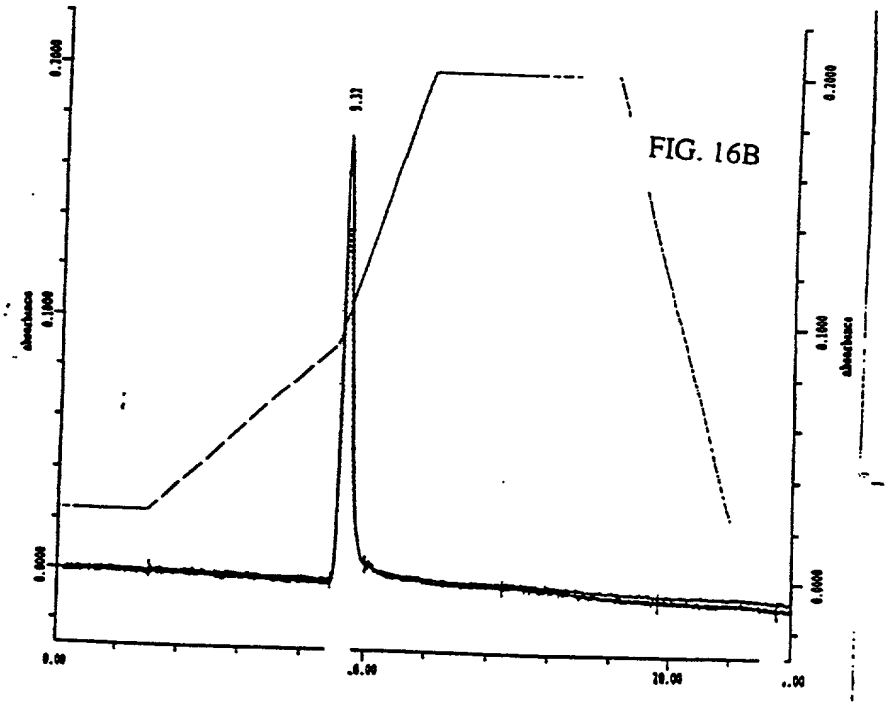


FIG. 16B

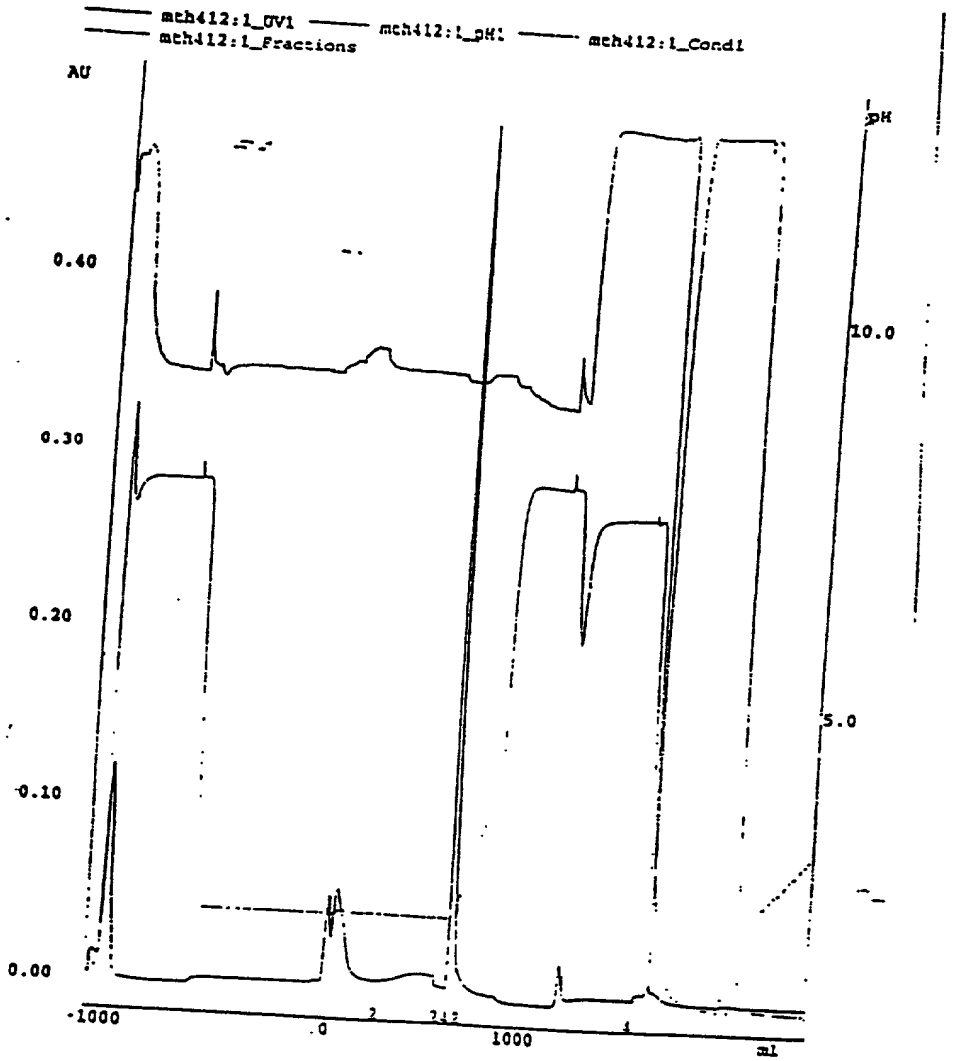

mch412:1_UV1
mch412:1_pH1
mch412:1_Cond1
mch412:1_Fractions
AU
0.40
0.30
0.20
0.10
0.00
pH
10.0
5.0
-1000
0
1000
ml

FIG. 17

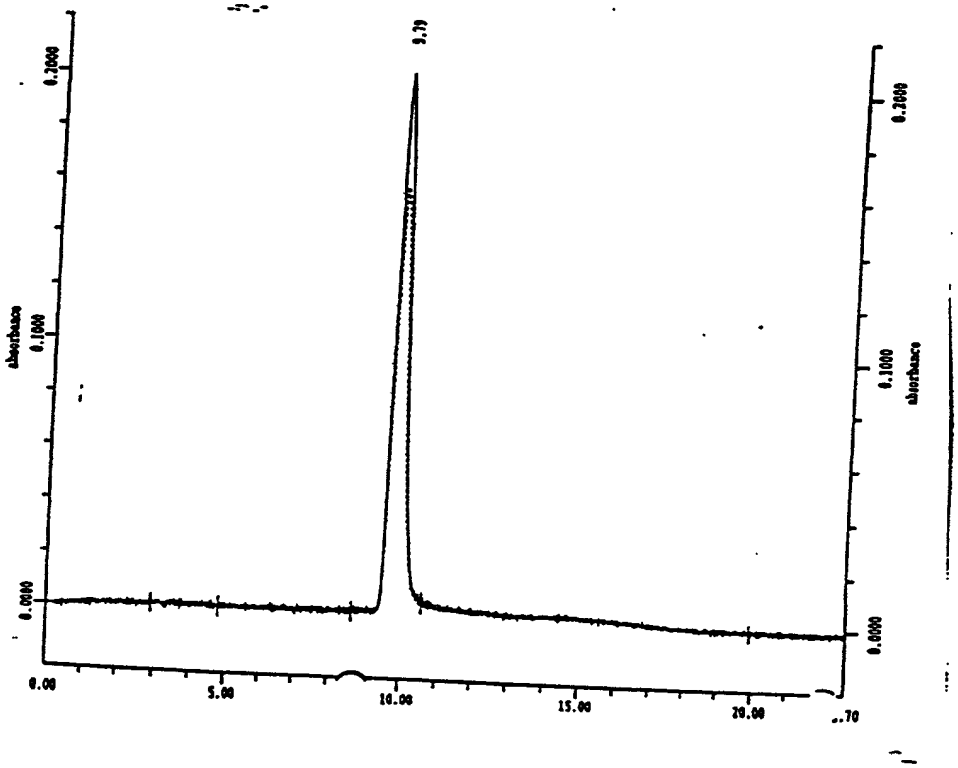
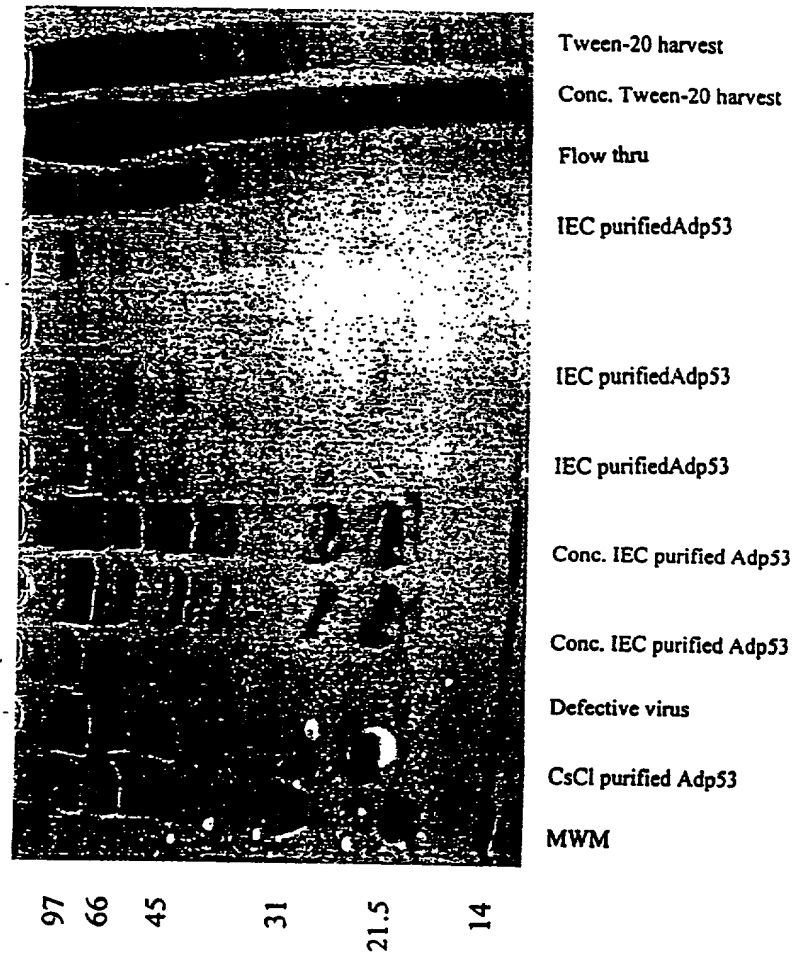


FIG. 18

FIG. 19A


Tween-20 harvest
Conc. Tween-20 harvest
Flow thru
IEC purifiedAdp53
IEC purifiedAdp53
IEC purifiedAdp53
Conc. IEC purified Adp53
Conc. IEC purified Adp53
Defective virus
CsCl purified Adp53
MWM
97
66
45
31
21.5
14

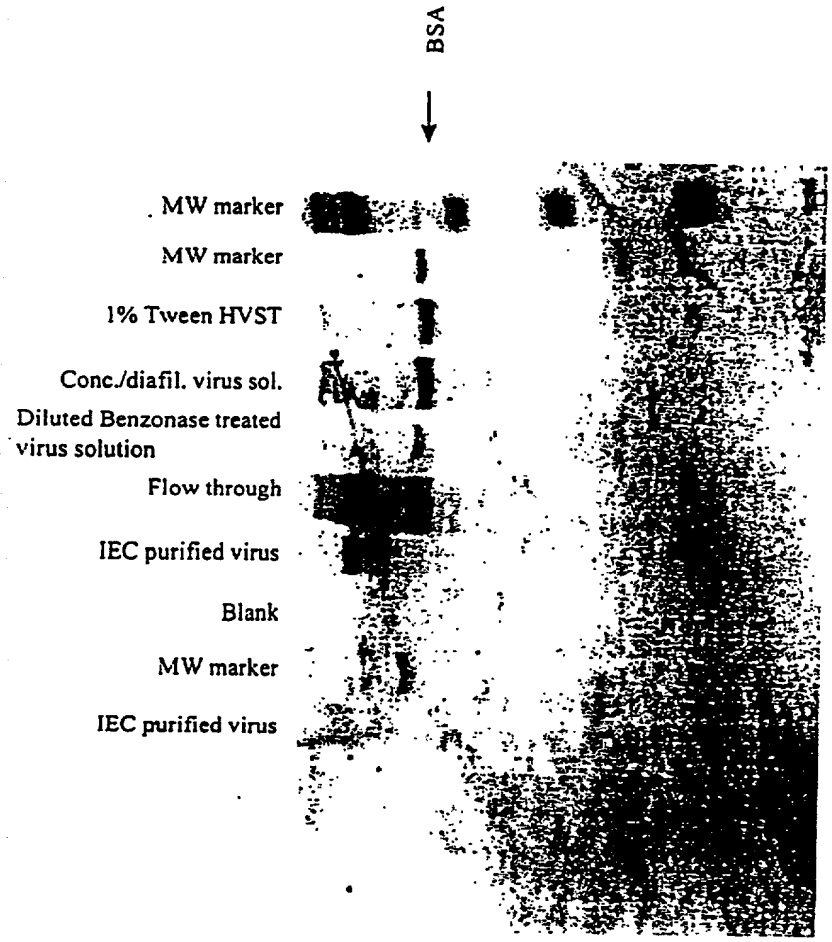

BSA
MW marker
MW marker
1% Tween HVST
Conc./diafil. virus sol.
Diluted Benzonase treated virus solution
Flow through
IEC purified virus
Blank
MW marker
IEC purified virus

FIG. 19B

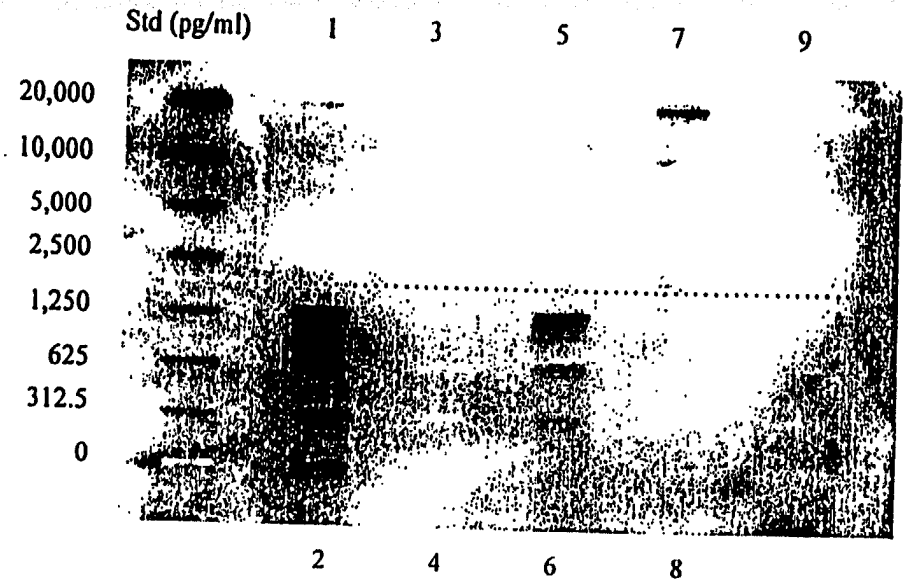


FIG. 19C

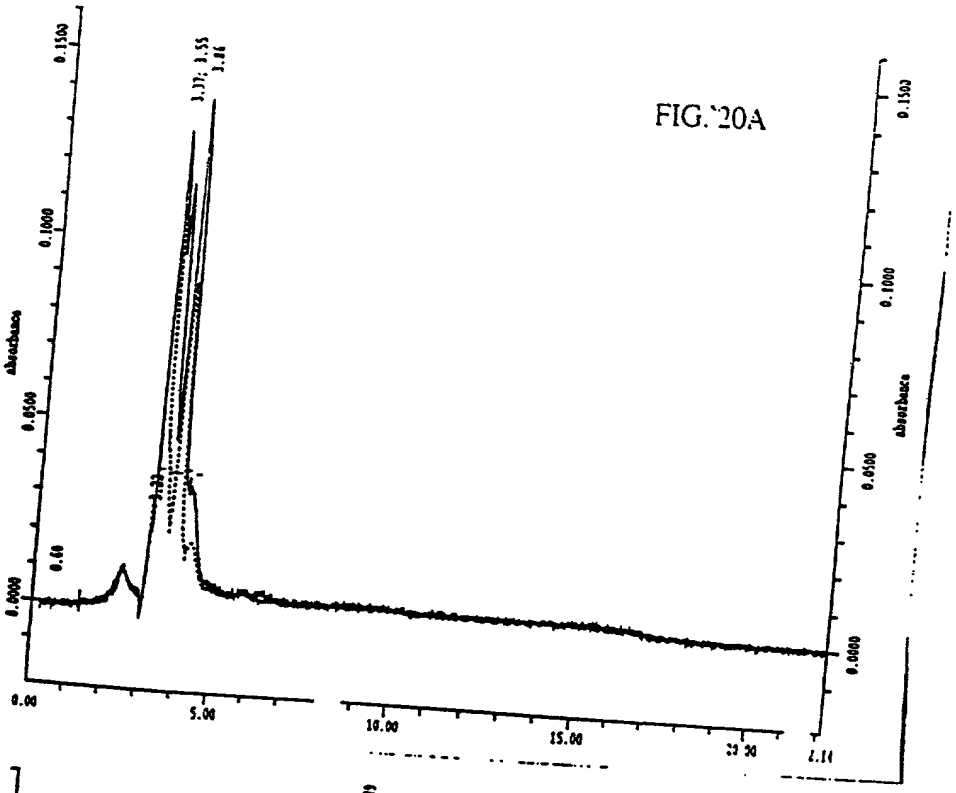


FIG. 20A

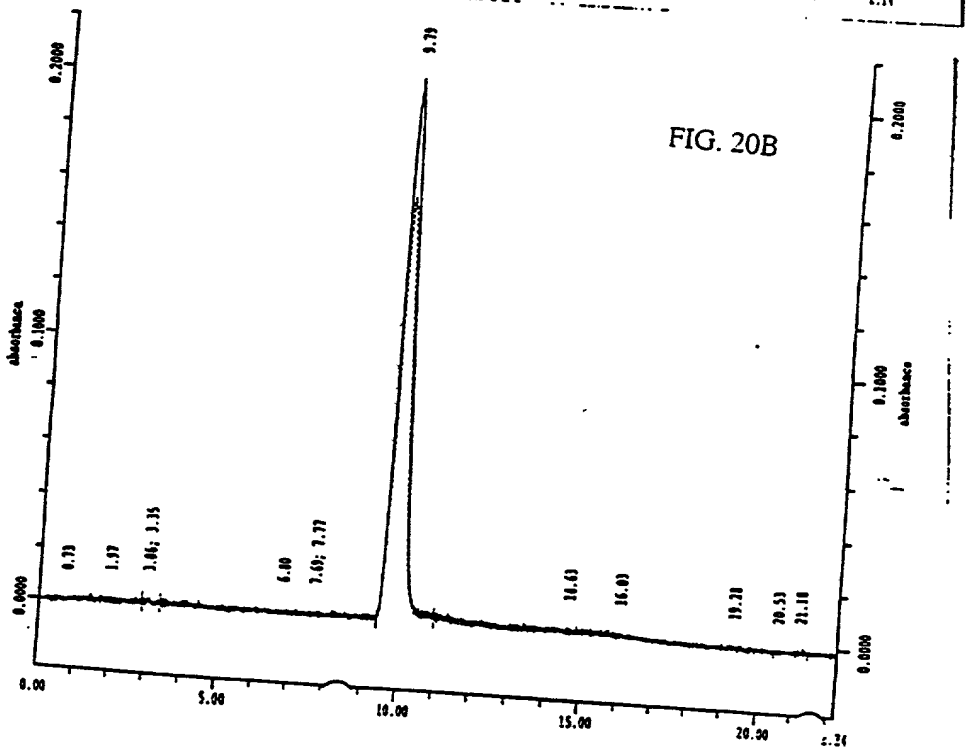


FIG. 20B

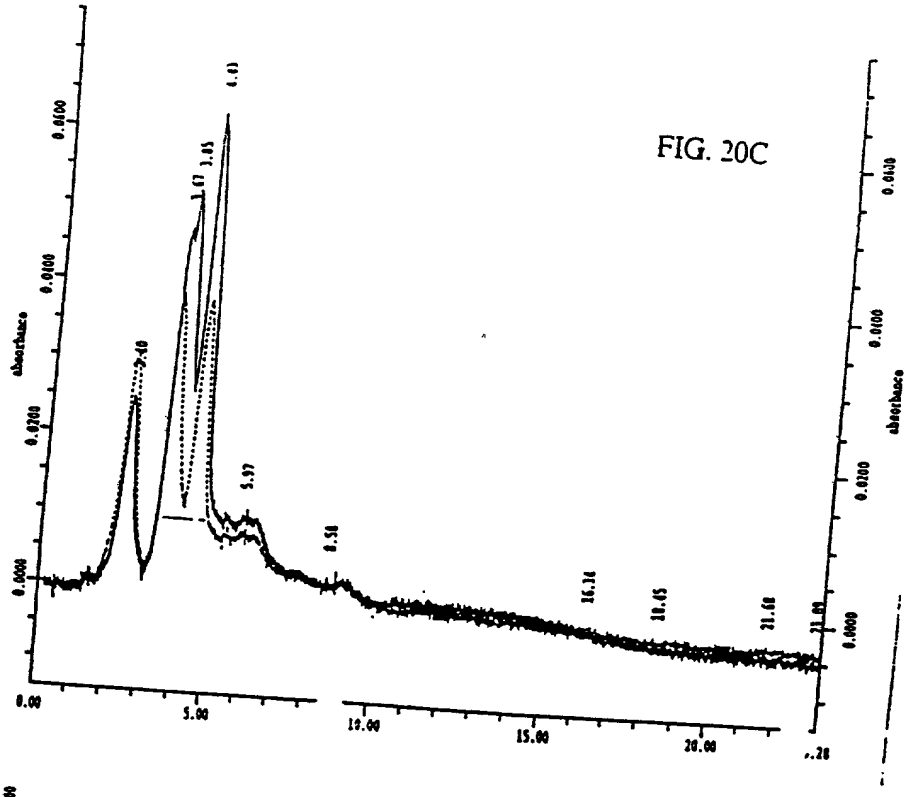


FIG. 20C

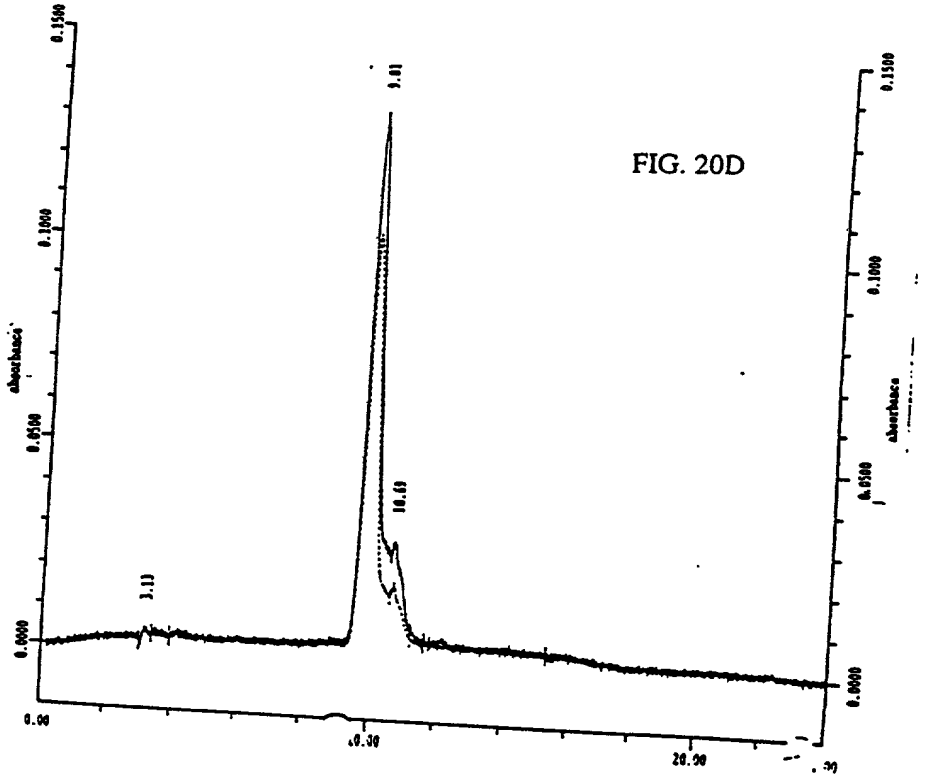


FIG. 20D

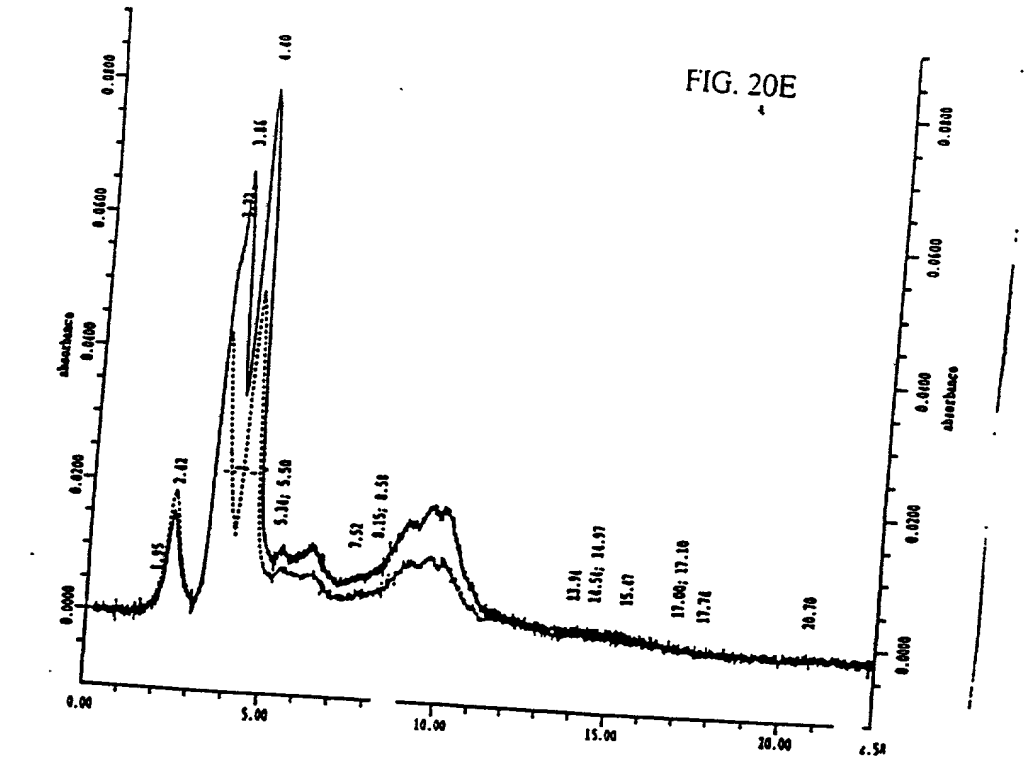


FIG. 20E

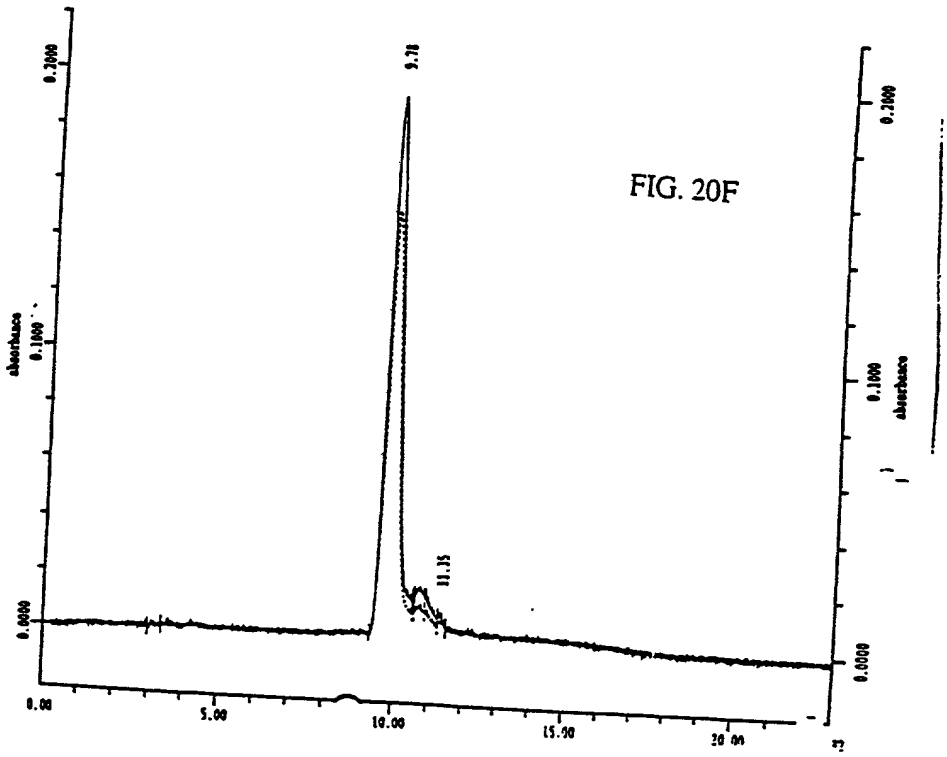


FIG. 20F

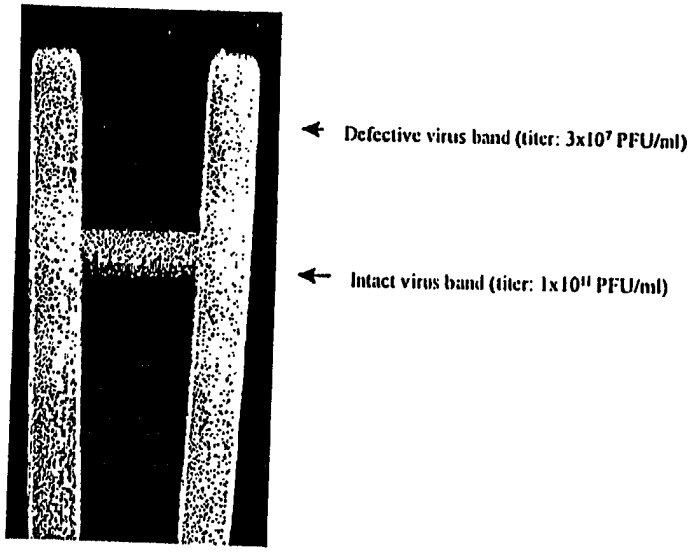

Defective virus band (titer: 3x10⁷ PFU/ml)
Intact virus band (titer: 1x10¹¹ PFU/ml)

FIG. 21

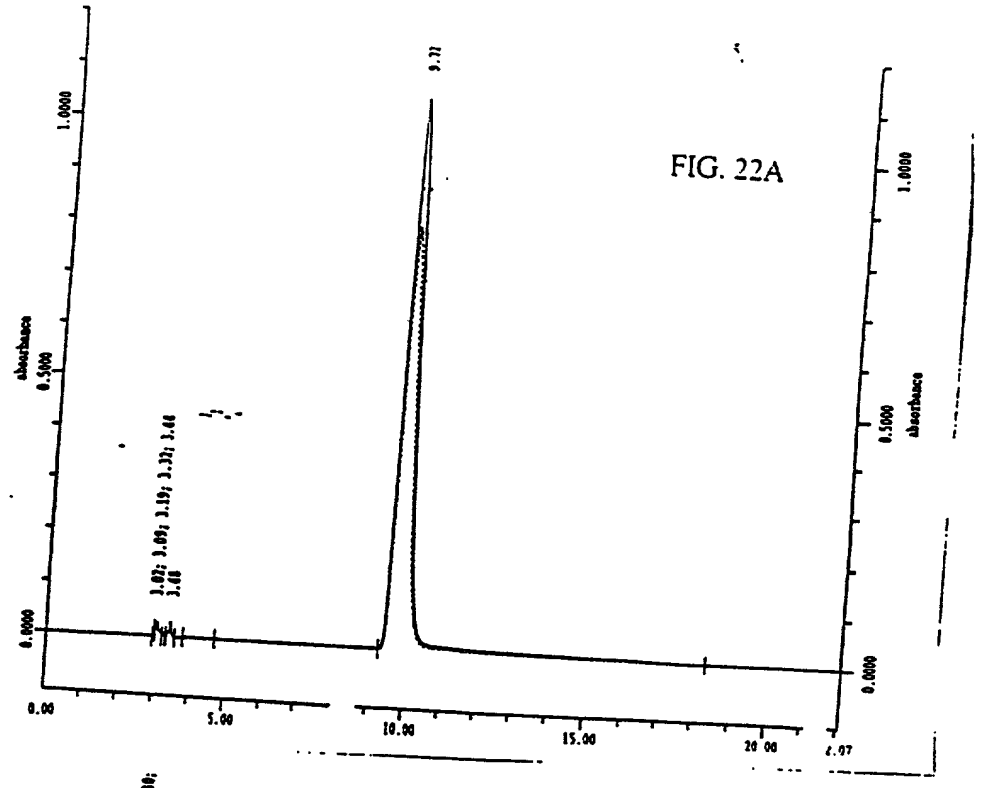


FIG. 22A

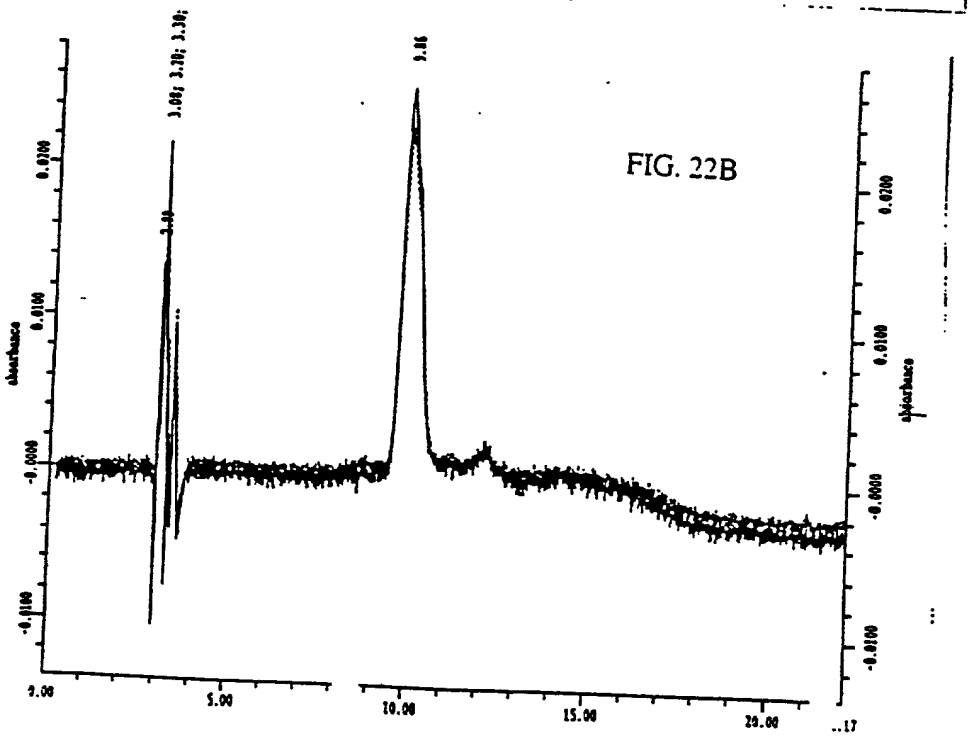


FIG. 22B

PRINT O
AS ORIGIN. Y FILED

	Titer (PFU/ml)	Vol. (ml)	Yield (PFU)	Recovery (%) Step	Acc.
Cube (low perfusion rate, keep glucose > 1g/L)					
↓ 1% Tween-20 in buffer A					
Harvest					
↓ Clarification and Filtration (0.22 um)					
Virus solution	$2.6x10^9$	1900	$4.9x10^{12}$		
↓ Conc./diaf. (10-fold conc., diaf. into 1M NaCl buffer A)					
Conc. sup	$2.5x10^{10}$	200	$5x10^{12}$	102%	
↓ Benzonase treatment (O/N, RT, 100u/ml)					
Treated sup					
↓ Dilute with water to conductivity = 22-25 mS/cm					
Diluted virus solution	$7x10^9$	700	$4.9x10^{12}$	98%	100%
↓					
Purified virus	$1.5x10^{10}$	240	$3.6x10^{12}$	73%	73%
↓ conc./diaf (5-fold conc.)					
Final purified product	$7x10^{10}$	50	$3.5x10^{12}$	97%	71%

FIG. 23